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10/718,357	11/20/2003	Israel Levy	150.002	1664

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Rashida A. Karmali  
13th Floor  
99 Wall Street  
New York, NY 10005

EXAMINER

VALENTI, ANDREA M

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/718,357

Applicant(s)

LEVY, ISRAEL

Examiner

Andrea M. Valenti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 9, 10, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,358,858 to Meng et al.

Regarding Claims 7, 9 and 10, Meng teaches a method of cultivating seaweeds in land based sea water ponds by producing spores and sporelings in cultures maintained in a laboratory facility (Meng Col. 2 line 22); growing the sporelings in a suspension culture under optimal growth conditions (Meng Col. 2 line 25-26); transferring the matured sporelings to large cultivation tanks to allow for rapid growth (Meng Col. 2 line 39); harvesting; drying; and grinding (Meng Col. 2 line 4-6) to result in a product for human consumption or pharmaceutical use (Meng Col. 1 line 13).

Regarding Claim 20, Meng teaches the seaweed product of Porphyra (Meng Col. 1 line 31 and Col. 4 line 66).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8, and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,358,858 to Meng et al in view of U.S. Patent No. 3,195,271 to Golueke et al.

Regarding Claim 1, Meng teaches a system for land based cultivation of seaweeds by phycological laboratory facilities suitable to produce spores and sporelings in cultures (Meng Col. 3 line 6 and Col. 4 line 65-66); a plurality of sleeves (Meng Col. 2 line 31) housed in temperature controlled land based facilities to allow the maturation of the sporelings (Meng Col. 1 line 66-68); a plurality of small aerated inoculation tanks (Meng Col. 2 line 34) enriched with defined nutrients under optimal conditions, to allow the mature sporelings to grow into seaweed pieces; and a plurality of large aerated cultivation tanks to transfer the seaweed pieces into to grow to full size (Meng Col. 2 line 40).

Meng teaches the importance of aeration, but is silent on the use of seawater and aeration beginning at the culturing phase. However, Golueke teaches that it is old and notoriously well-known to cultivate the seaweed in seawater that is aerated (Golueke Col. 1 line 67 and Fig. 1 #21). It would have been obvious to one of ordinary skill in the art to modify the teachings of Meng with the teachings of Golueke at the time of the invention for a means of providing ideal artificial growth conditions by simulating some of the natural environmental conditions in which seaweed grows.

Meng as modified is silent on a plurality of tanks. However, it would have been obvious to one of ordinary skill in the art to modify the teachings of Meng at the time of the invention since the modification is merely the duplication of a known element for a

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multiple effect performing the same intended function. The plurality of tanks enables mass production in a cost effective manner and enables one to control different environmental conditions, stages of development, and nutrients in various tanks.

Regarding Claim 2, Meng as modified teaches a land based technology comprising a seeding unit producing spores (Meng Col. 3 line 6); sporeling production unit (Meng Col. 3 line 11); maturation unit (Meng Col. 3 line 16); cultivation unit (Meng Col. 3 line 20); harvesting; drying; and grinding (Meng Col. 2 line 4-6).

Regarding Claim 3, Meng as modified teaches the seaweed species grown in land based seawater ponds is Porphyra (Meng Col. 1 line 31).

Regarding Claim 4, Meng as modified teaches the nutrients added to the seawater are designed to produce a plurality of seaweeds that are used as neutraceuticals, food components, pharmaceuticals or cosmetics (Meng Col. 1 line 13).

Regarding Claim 5, Meng as modified teaches production of spores in petri dishes (Meng Col. 3 line 6); cultivation of sporelings in sleeves under environmentally controlled conditions (Meng Col. 3 line 16); growth in small and large tanks (Meng Col. 3 line 20 and col. 2 line 34-41). Meng is silent on separating the inoculation and harvesting into separate ponds. However, it would have been obvious to one of ordinary skill in the art to modify the teachings at the time of the invention since the modification is merely the separation of known steps into replicated ponds for the efficient management of the system of having a continuous production at different stages and for more control over the environmental conditions at particular points in production.

Regarding Claim 6, Meng as modified is inherently programmable for production throughout the year since Meng teaches controlling the light and temperature conditions for the cultivating seaweed.

Regarding Claim 8, Meng as modified teaches the large cultivation tank contains suitable nutrients to ensure high yields of seaweed products (Golueke Col. 2 line 34).

Regarding Claims 11, 13 and 17, Meng as modified is silent on the small aerated inoculation tanks have the volume capacity of about 40 liters, and the large aerated cultivation tanks have the volume capacity of about 4000 liters; varying sizes including 30-500 m<sup>2</sup> ; or the volume capacity of each of the sleeves is about 20 liters, of the tanks used in stage 1 is about 40 liters, of the large tanks used in stage 2 is about 4000 liters, of inoculation ponds in stage 3 is about 30m<sup>2</sup> and the cultivation ponds used in stage ponds used in stage 4 of 500m<sup>2</sup>.

However, it would have been obvious to one of ordinary skill in the art to modify the teachings at the time of the invention through routine tests and experimentation for efficient and optimized production sequence considering desired production quantity and the availability of land base.

Regarding Claim 12, Meng as modified teaches the importance of nutrients (Golueke Col. 2 line 34) and N:P nutrients are notoriously well-known fertilizers, but Meng is silent on seawater being enriched with 0.5mM NH<sub>4</sub>Cl and 0.05mM Na<sub>2</sub>PO<sub>4</sub>, at least two times a week, for at least three weeks. However, it would have been obvious to one of ordinary skill in the art to modify the teachings at the time of the invention through routine laboratory tests and experimentation to derive the desired fertilizer

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application quantity and frequency based on different seasons of the year or the seaweeds development stage.

Regarding Claim 14, Meng as modified teaches the drying unit comprises centrifugation drums or low temperature ovens (Meng Col. 2 line 49).

Regarding Claim 15. Meng as modified teaches the seaweed species grown in land based seawater ponds include Porphyra (Meng Col. 1 line 31).

Regarding Claim 16, Meng inherently teaches the land based temperature controlled facility housing the plurality of sleeves, further comprises a chiller to regulate the temperature (Meng Col. 4 line 68 and Col. 3 line 12).

Regarding Claims 18 and 19, Meng as modified teaches the seaweed product of Porphyra (Meng Col. 1 line 31 and col. 4 line 66).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,958,761.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea M. Valenti whose telephone number is 703-305-3010. The examiner can normally be reached on 7:30am-5pm M-F; Alternating Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

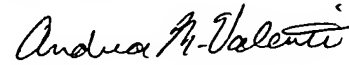


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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrea M. Valenti  
Patent Examiner  
Art Unit 3643

27 October 2004



Peter M. Poon  
Supervisory Patent Examiner  
Technology Center 3600